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A Thesis
on Anasarca

by Southey S. Satchell
of Virginia.

Philadelphia March 7th 1822

March 8th 1822

253 Market St. New York

admitted March 25th 1822

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This disease consists in a preternatural collection of a serous or watery fluid in the common cellular tissue of the body, & is usually attributed to a destruction of that just equilibrium between exhalation & absorption, which exists in a healthy condition of the system. This want of harmony & neutralization in these two functions, exhalation & absorption, may arise either from an increase of the former or a diminution of the latter and it seems in a large majority of cases to originate from an augmented effusion. But it would appear that increased exhalation & diminished absorption have their causes, — which may, very probably be found in an altered & excited action of the blood vessels or in a highly debilitated & cachectic state of the system, & these should be regarded as the ultimate & fundamental causes of anasarca or any other species of dropsy.

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Anasarca is induced by whatever impedes the circulation of the blood, as tumours compressing the larger blood vessels & congestions or obstructions of some of the abdominal viscera, or it is consequent to a great variety of other diseases, which greatly impair the integrity of the constitution; such as intermittent fever, gout, jaundice, dysentery, rheumatism, asthma, pulmonary consumption, pneumonia, scarlatina, erysipelas &c.

It first shews itself by a swelling of the feet and ankles toward evening, which for some time disappears again in the morning. The tumefaction is soft & unelastic & when pressed upon by the finger, retains its impression for a while, the skin becoming much paler than natural. The swelling gradually extends upwards & occupies the legs, thighs & trunk of the body & at last even the face & eyelids appear full & bloated. The disease continuing to

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advance, the cellular tissue of the lungs becomes
affected & effusion taking place into the different
cavities of the body, we have a universal dropsy.
Here the respiration is difficult and oppressed &
is accompanied by a cough & an expectoration
of a watery fluid. In this stage, the bowels
are constipated, the urine is scanty & high colour-
ed, the skin is hot & dry, the perspiration being
much obstructed, the pulse is feeble, small,
quick & corded & there is more or less thirst,
emaciation & a callow complexion. Dropsy be-
comes & a slow, insistent fever supervenes. In
some cases the insinuate distention, forces the
water through the pores of the skin & in other
instances, the cuticle being dense & strong, prevents
this transudation & is elevated into blisters, which
ultimately terminate in gangrene & mortification.
Sometimes from the great distention, the skin
is much hardened, as to give the swelling a
considerable degree of firmness.

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The disease is more manageable, when recent than when of long standing. It is also more easily cured, when originating from topical or general debility, than when it is accompanied or occasioned by visceral derangement.

In the treatment of this disease, two indications are to be fulfilled. First, the evacuation of the accumulated fluid. Secondly, we endeavour to change or remove the morbid condition of the system, producing the disease. I shall first treat of anasarca connected with a febrile or excited state of the system. The action of the arterial & absorbent systems being in an inverse ratio to each other, whenever we wish to invigorate the operation of the latter, we should subvert the energy of the former, by the various depletory measures. The evacuation most effectual in reducing action, is venesection & this in the present case of anasarca is indispensably necessary, but as in all other cases of disease, we should resort to

it with great circumspection & due regard to the existing condition of the system. The pulse in the early stage of febrile anasarca, is hard, tense and corded & the blood when drawn is invariably found to manifest inflammatory action by its siziness. To the symptoms already enumerated may be added a hot & dry skin, a parched tongue & fauces, great thirst & others which are characteristic of a febrile condition. So long as such symptoms prevail, it will be necessary to repeat venesection & sometimes a copious detraction of blood will be required. Copious bloodletting has in some cases alone effected a cure & the same has been done by a spontaneous hemorrhagy. But this vigorous treatment is only suited to cases unequivocally inflammatory. There are many cases in which only moderate bleeding is required & many others where we cannot bleed at all, without manifest prejudice. Hence by an indiscriminate

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use of this evacuation, we may do more injury than by entirely neglecting it!

Beside bloodletting, we must resort to other evacuations. Emetics were at one time much used, from an impression that they powerfully promoted absorption, which they most undoubtedly often do; but they have lost much of their former reputation & are now rarely used. They are sometimes necessary to evacuate the stomach when loosed & spasm'd with acids. They are beneficial when the disease is connected with intermittent fever, as when it occurs in miasmatic countries. When great torpor & insensibility of system exist, they often operate usefully by restoring a susceptibility to the impression of other remedies. Active emesis has sometimes done good, when the disease depended on congestion or obstruction of the biliary ducts from spasm or calculi. To do good it is often necessary to repeat them frequently & upon the whole emetics

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are most useful when given as nauseants.

Among the most important remedies in the cure of this disease, are purgatives. They have alone accomplished cures. They produce their good effect by obviating costiveness, which so uniformly exists in this disease & by counter-irritating, thus occasioning a transposition of the morbid action to the intestines, & by reviving the arterial excitement, as a consequence, invigorate the power of the absorbents. But there is a choice in purgatives & they should not be indiscriminately used.

It was formerly the fashion to use the drastic hydragogue cathartics; these however are obviously contra-indicated in the present instance, being only proper in old & protracted cases, where the stomach & bowels are torpid, the habit phlegmatic & no fever or visceral obstruction exists. The saline purgatives are decidedly preferable in this case & particularly the tartarales. A combination of jalap & cream of tartar, in the proportion of x gr. of the

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first, to ℥j. or ʒj. of the last, constitutes the best cathartic in this precise case. Its effects are of ten very prompt & astonishing, it even cures the disease. It should be given every day or every other day, so as to obtain its constant impression on the system.

These measures proving abortive, we must have recourse to the use of diuretics. One of the best of this apartment of articles in febrile dropsy, is undoubtedly the cream of tartar. This will sometimes very speedily dissipate dropsical swellings, & it seems to do this by a combined operation on the intestines & kidneys, producing an increased flow of urine & copious saline watery excretions. It should be remembered that the operation of this article is materially influenced by the mode of administration, being exclusively diuretic when largely diluted & operating as a powerful hydragogue cathartic, when given with a small portion of water or in the form of an electuary, either

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alone or in conjunction with some other purgative. The latter mode is preferable when we wish to evacuate large collections of water.

Much has been said of the anti-hypospic = powers of the vegetable & mineral alkalies & of the two, the first is decidedly to be preferred. This is given in the form of the sub-carbonate & is most appropriate to cases attended with great gastric depression. This condition of stomach is most commonly found in drunkards & debauchees, in which case an acid is frequently evolved, producing or accompanying, various distressing gastric derangements. It probably is this instance operated by neutralizing the evolved acid & by making a powerful impression on the stomach, subverting its morbid condition, invigorating its function & thus imparting health & tone to the general system, through the medium of sympathy, the natural consequence of which must be an in =

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excessive discharge of urine & a restoration of health.
But be its modes of operation what it may, its
virtues are greatly enhanced, by a combination
with the bitter tonics, as quassia, gentian, columbo,
&c. Thus exhibited, its diuretic powers are said
to be increased & it removes the disorders of the
& strengthens the whole habit. Notwithstanding
what has been said, the alkali must be acknow-
ledged to be inferior to some of its combinations
with the acids, forming what are called neutral
salts. The acet. potash was at one time in so
high repute, as to obtain the emphatical name
of sal diureticum; but it has since forfeited so
little of its primitive reputation. The tart. pot.
or soluble tartar, is highly commended by many
practitioners, & by some is even preferred to the
cream of tartar. The common saline or neutral
draught, a combination of the carb. pot. & cream of
tartar or soluble tartar, are sometimes useful
preparations.

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The nit. potassa is eminently suited to dispel
of high or inflammatory action. This is not a
very active diuretic, but it powerfully subdues
febrile excitement. In order to prevent it
from offending the stomach, it should be largely
diluted, as ℥j. to a quart of water, which
may probably be taken in twenty four hours.
Its virtues are improved by being combined
with tart. emet. & a small portion of calomel,
constituting the well known nitrous or antimonial
powder.

The spiritus ætheris nitrosi is a mild diuretic
& particularly applicable to the cases of children.
It also possesses febrifuge powers. But we
commit an error in giving small doses of this
article, not less than ℥ss. should be given three
or four times during the day. The following is a
valuable diuretic, R. Spt. ætheris nit. ℥j.

Vin. Ant. ----- XXX qts.
Tinct. Op. ----- XXV qts.
Aq. Font. ----- ℥ss. m. ft.

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Parsley is often a mild & effectual diuretic. It is even said to have cured dropsy, after many other remedies had failed. It is fashionable to combine watermelon seeds with it, but it is very doubtful whether these increase its efficacy. It may be taken copiously in the form of a tea or infusion & is not apt to nauseate the stomach, like many other articles. A mention of scabies, a species of lichen, is considerably praised & should be exhibited as copiously as the stomach can bear.

The *pyrola umbellata* is highly prized by many eminent physicians & it possesses a combination of the diuretic & tonic properties. It often operates actively & may be given in the form of an infusion or extract, in the quantity of one pint of the first or ℥j. of the latter dissolves in water, in twenty four hours.

The system being sufficiently reduced or originally enfeebled & relaxed, we must dispense with bloodletting, & if there be much torpor of the

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alimentary canal or the general system, the
mastic purgatives must be used with the view
of re-exciting the dormant energies of the system
& thus re-establishing a susceptibility to the op-
eration of other remedies. Calomel may be united
with any of the vegetable matters, as gamboge,
scammony, colocynth, elaterium &c. Two, three
or more should be combined, as they are thus ren-
dered more efficient.

In this case certain diuretics are also impor-
tant. Of this class of articles, none have been
more lavishly extolled than digitalis & it is un-
doubtedly often useful if properly administered.
So long as febrile or inflammatory symptoms exist,
digitalis is either negatory or actually mischievous.

But when the pulse is feeble, the countenance
pallid & the surface cold, it rarely fails to do
good. It may be given in the form of infusion,
tincture or powder & the first is probably the best.
Tobacco has been enthusiastically praised by Fowler

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& some other physicians, but it has lost a large portion of its primitive reputation. It is given in the dose of XX or XXX grs . of the infusion, two or three times in the day.

But of all the diuretics, the cilla maritima is the most conspicuous. This is inadmissible so long as fever or inflammatory excitement continues. v

It should be so given, as to induce a very slight gastric uneasiness & even this does not seem to be absolutely necessary. The usual mode of administration, is to combine ij . or ijj . gr . of the squill, with j . gr . of calomel, which is to be taken two or three times in twenty four hours & continued for several weeks, so as to induce a moderate salivation.

Of great debility & torpor of system prevail, it will be requisite to recur to the most stimulating diuretics. Cantharides in this case often displays very considerable diuretic effects, if given to the extent of ijj . ijj . or j . gr . ^{of the extract} in twenty four hours. But

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if they be given in minute doses or in an appropriate condition of system, they either do no good or are manifestly prejudicial.

Although the *ol. terebinthina* has so strong an affinity to the urinary organs, yet it does not seem to be very useful in dropsy. It should be given in the dose of X. XV. or XX grs. three or four times a day. If it be given in a larger dose, it operates as a purgative & thus its diuretic effect is defeated.

The *polygala cerega* has been very lavishly lauded by some very eminent physicians, but it seems never to have obtained the confidence of the profession at large & it has now lost much of its fame. Nevertheless, from its wide pervading stimulant nature, it would seem to be a remedy entitled to no little regard in cases of universal dropsy, connected with an atonic state of the system. Its anti-hydrotic virtue is often much improved by a combination with

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calomel, in the proportions of viij. to x gr. of the powder of the former to p. or j. gr. of the latter, made into a pill & taken two or three times a day.

The *pelethium autumnale* contains an elevated character among some of the medical men of the continent of Europe, yet it appears to be lowly estimated by the British & American physicians. It may be given in the form of the syrup or ointment, in the quantity of ℥j. twice or thrice a day & the vinous tincture may be tried in the dose of a teaspoonful.

The *alliaceæ* are sometimes useful, of which the garlic is best. It is most beneficial in cases originating from drunkenness, where the stomach is much depraved. Mustard & horse-radish are now & then good. As the volatile tincture of guaiacum sometimes proves eminently diuretic in acetic warts it not be equally efficient in the present instance? *Cassia* occasionally acts as a =

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diuretic. Diaphoretic were at one time very fashionable in vesicles & they have often been used with no little advantage. They are best adapted to cases generated by the intermitting fever & to such as are kept up by visceral congestion or obstruction, when the pulse is usually small, tense & corded, the skin dry, the body greatly emaciated & other symptoms indicative of a highly morbid & enfeebled condition of system exist. Here the blood has receded from the extremities of the body & is confined principally to the great viscera. By their centrifugal operation, they divert action from the internal parts to the superficies of the body, unload & relieve the viscera, restore the equilibrium of the circulation, invigorate the action of the cutaneous vessels, whose functions are so much impaired in these cases & thus prevent a further effusion of water, and as the viscera most commonly depend on increased exhalation, by diminishing this, the absorbents will probably be enabled to remove the

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fluid already accumulated. They also tend to remove the torpor attendant on this case of prostration & thus create a susceptibility to other remedial impressions. The external means for inducing diaphoresis are often very useful. The vapour bath has even been supposed to have cured the disease. Warm air has been thought good in this case.

Friction with warm flannel or stimulating substances is useful, particularly in typical tropical affections. Also a stimulating pediluvium or general bath. Although the external diaphoretic will often be useful, yet the Dover's powder is to be preferred. It is inadmissible as long as febrile excitement exists. Most advantageous in cases brought on by the intermittent fever.

Opium alone has been warmly praised by some & to no good, it should be exhibited largely, but it is probable that it does not merit much attention. Of late the eupatorium perfoliatum has been recommended in this disease & it seems best suited to ease

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occurring in miasmatic regions, where the combined operation of tonics & diaphoretics is demanded.

Mercury is not so beneficial in anasarca as in ascites & hydropothorax. But when the fluid is produced or kept up by visceral obstruction, mercury becomes indispensable. When the disease is caused by diminished absorption, it is also useful, as it sometimes powerfully invigorates this function. It is equally inapplicable to inflammatory or leucophlegmatic effusions. When scrophula, scurvy or any cachectic state exists, it is highly pernicious, being very hostile to such conditions of system. It is most appropriate to cases of some tone & soundness of constitution, external action being previously resorted to.

Besides these general remedies, it frequently becomes necessary, on account of the painful distention, to resort to local measures for evacuating the water.

For this purpose numerous superficial punctures are best. We should avoid incisions or deep punctures, as erysipelatous inflammation & gangrene would be

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apt to follow such an operation. The discharge may be promoted by some emollient fomentation. If gangrene should ensue, the best remedy is the application of a flannel roller, both above & below the gangrenous part, so as tightly to compress the limb. This operates by preserving a due degree of warmth in the member. Blisters have in some rare cases been successful in checking this case of gangrene. They have also been used for the purpose of evacuating the water, but they are very inefficient & should be used with much circumspection, especially where there is much debility, as they are liable to cause mortification.

The second indication, to change or remove the morbid condition of the system, producing the disease, may be fulfilled by both general & local remedies. When the disease is in some degree local, friction with the ray hand or the flesh brush or if it be preferred, a little olive oil or spirits, will be useful. A leech or leeches sticking pretty firmly applied & washing =

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cold water on the extremities twice or thrice a day, will be found useful. The general remedies, are the various tonics, but particularly the chalybeates. Exercise is very important & must be graduated & adapted to circumstances. It has even cured the disease. The general cold bath will be useful, if the debility be not too great to bear it. If there be a great disposition to a return of the disease, a combination of tonics or bitters & diuretics should be used.

Regimen. The diet should vary according to the state of the system. If there be a febrile or inflammatory excitement, the diet should be low & antiphlogistic & even entire abstinence for several days has been attended with great advantage. But in the opposite condition of the system, the diet should be light & nutritious, as eggs, oysters &c. & rigid attention to diet has sometimes effected cures. Drinks taken pretty copiously, often act as powerful diuretics & thus remove the disease. If the flow of urine be

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increased by their use & other symptoms be amended,
they should be continued. But if the urine be not
allegorized, nor the other symptoms meliorated, they
should be immediately discontinued. Simple water
or what is better, water impregnated with the
vegetable acids, as lemonade, cider & water, vinegar
& water &c. may be used. An infusion of juniper-
berries is useful. An infusion of green pine tips is
useful & is sometimes a good diuretic. Watermelons
are very good. When there is great stony, weak
gin & water or whiskey & water, may be used. These
drinks have sometimes alone effected cures & upon
the whole, water may be regarded as the most
useful & efficient diuretic, as it is necessary to
the promotion of the diuretic operation of all other
articles.

